

A Review of the Economic Assumptions

Louise Sheiner

Hutchins Center on Fiscal and Monetary Policy

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Key economic assumptions

- LFPR/Hours/Unemployment Rate (Burtless)
- Real wage growth=
 - Productivity growth
 - Compensation/GDP ratio growth Labor share
 - Earnings to compensation ratio growth
 - GDP-CPI price differential
- Interest rates
- CPI
- Taxable share of wages (inequality, changes in underreporting)

Outline

1. Interest Rates
2. Labor Share
3. Earnings Share of Compensation
4. Deflators and wedges

Not included:

Productivity Growth

Taxable Share

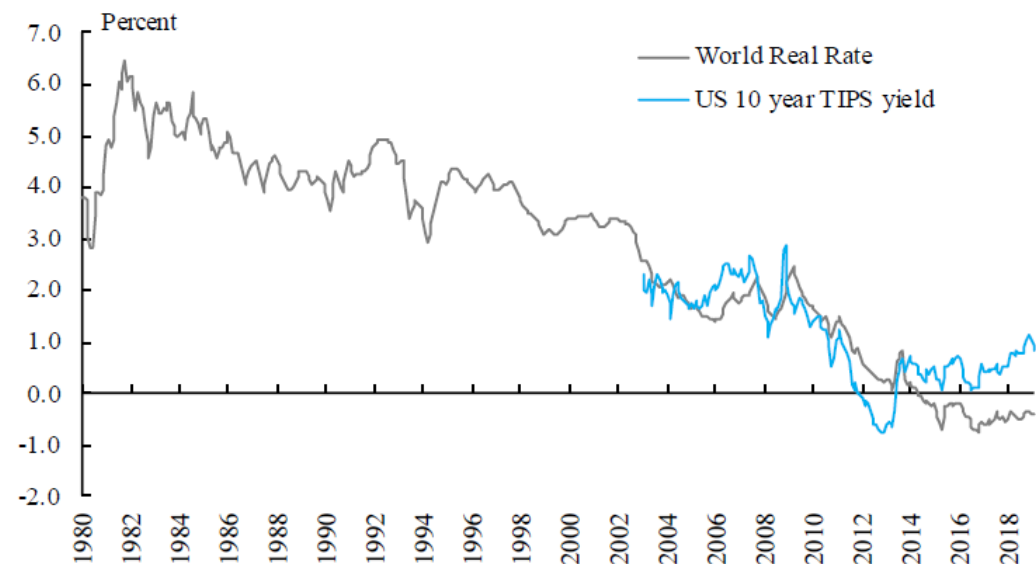
Interest Rates

Summary of Rachel and Summers:

30-year decline in real interest rates across the advanced economies and US

Empirical estimates of “natural rate” (rate consistent with stable inflation and output at potential) show 3 percentage point decline since early 1980s.

Figure 1: Real interest rates estimated from the inflation-linked bonds in advanced economies and in the United States



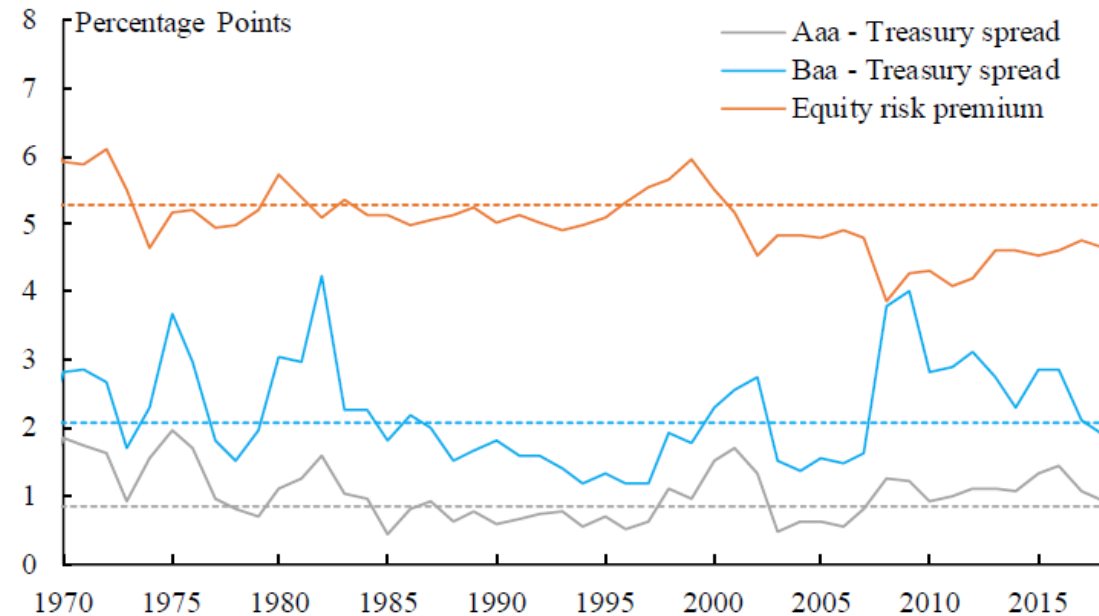
Note: The world real rate is calculated following the methodology in [King and Low \(2014\)](#): it is the average of interest rates on inflation-protected government debt securities across the G7 excluding Italy. Data are from DataStream and form an unbalanced panel. In particular, the Figure relies on the UK inflation-indexed gilts in the early part of the sample. The US TIPS yield is the yield on a constant maturity 10-year Treasury Inflation-Indexed Security, retrieved from FRED, Federal Reserve Bank of St. Louis (code DFII10).

1. Interest Rates

Decline seen across wide array of assets—including Aaa and Baa bonds and equity risk premium (no change in spreads means rates move in tandem)

Thus, not something particular about sovereign debt, but about supply and demand for global savings

Figure 3: Corporate bond and equity spreads in the United States over the long-run



Note: Dashed lines represent the long-run averages, and are calculated over 1919-2018 for bond spreads and 1960-2018 for the ERP. The Aaa and Baa spread data are from [Krishnamurthy and Vissing-Jorgensen \(2012\)](#) up to 2008, and from FRED thereafter (series codes AAA - GS20 and BAA10Y). The equity risk premium estimate is the historical estimate from Professor Aswath Damodaran of New York University: <http://www.damodaran.com>, constructed as cumulative return differential on S&P500 and 10-year Treasury bond since the 1928.

1. Interest Rates

Long list of drivers: things that have changed over past 30 years that might have affected supply or demand for savings

Increased supply/lower demand for savings => lower rates

Lower supply/higher demand for saving +> higher interest rates

Forces that raise interest rates in advanced economies:

- Higher government debt (higher demand)
- Increased health and pension spending (lower supply)
- More access to credit/more insurance (lower supply)

Forces that lower interest rates

- Longer retirements (higher supply)
- Lower productivity growth (higher supply/lower demand)
- Slower population growth (lower demand for new investment)
- Increase in inequality (higher supply)

Methodology: Using estimates from literature and some basic models, estimate effect of each of these factors on interest rates, in history and forecast going forward.

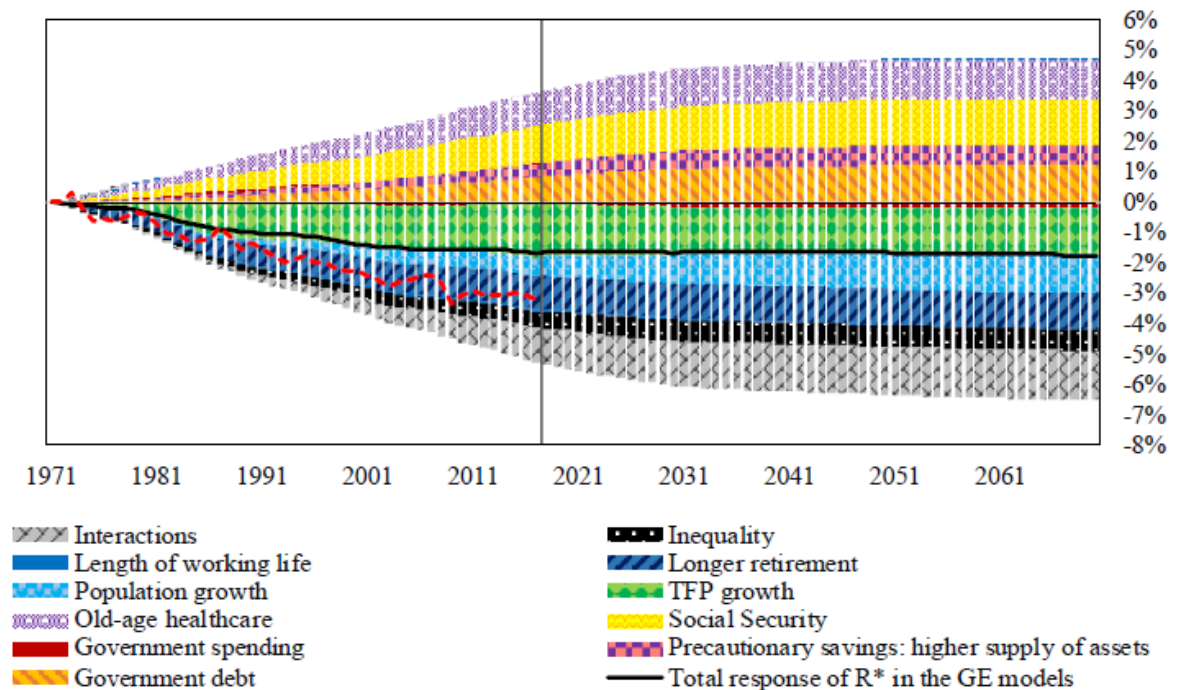
Forecast assumes 0.7% TFP growth, duration of retirement declines .4 years by 2030. **and policy and debt to GDP unchanged – not a forecast with increasing debt to GDP ratios)**

1. Interest Rates

Results:

- (1) Black line shows net effect of all of these factors.
- (2) Factors together explain a 1.7 percentage point decline in neutral real interest rate—relative to an estimated decline of 3 percentage points.
- (3) Absent government policies, neutral rate would have been deeply negative.
- (4) Going forward, if debt to GDP ratio doesn't rise, interest rates stay low.

Figure 18: Changes in the equilibrium real interest rate as a result of policy, demographic and technological shifts



1. Interest Rates

Paper explains a large share of the decline through fundamental drivers. Many of these are predictable and unlikely to change.

Exceptions:

TFP -- Higher TFP would boost interest rates MORE than one-for-one.

Higher debt would raise interest rates too.

Makes it less likely that recent experiences are a “blip”

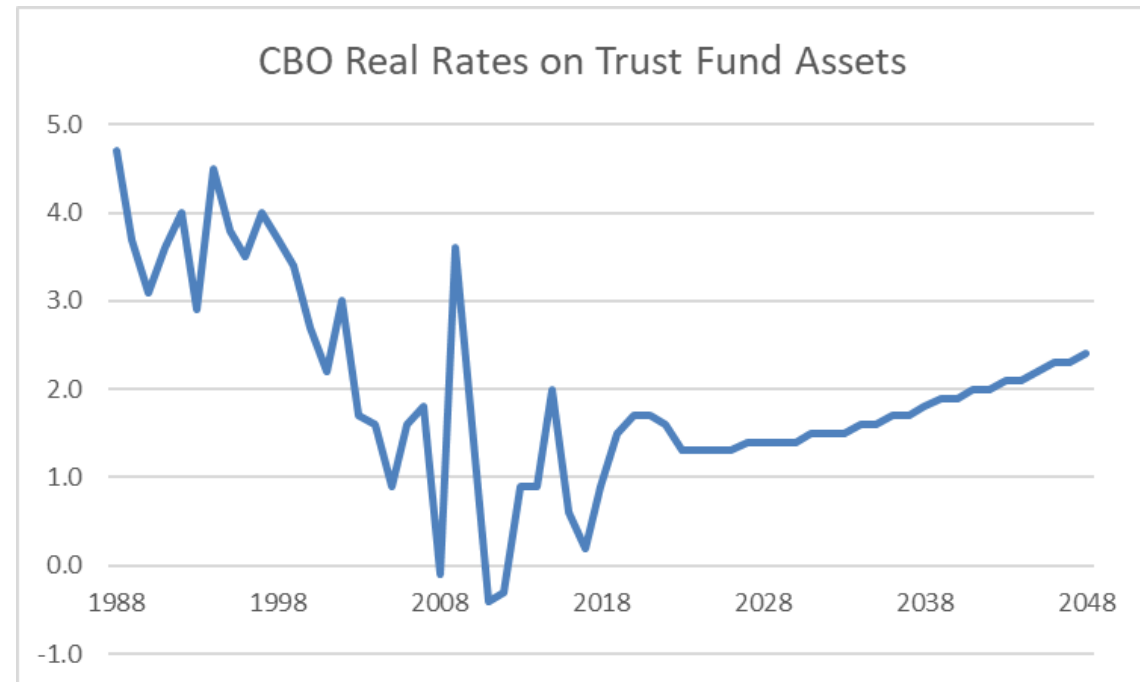
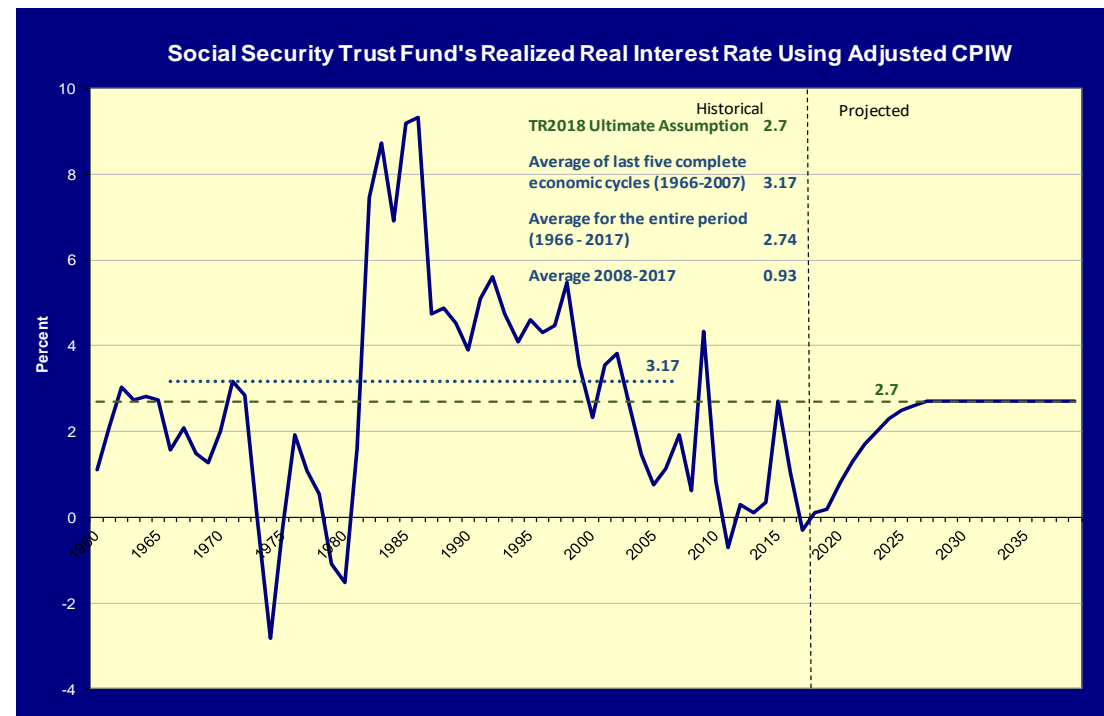
1. Interest Rates

View that we are in a new regime with low interest rates is widespread.

Accepted by many academics (e.g. Summers, Blanchard, Bernanke), and reflected in long rates here and around the world.

TR2018 has real rates increasing to 50 year average of 2.7% and staying there.

CBO has real rates going to about 1.3% and then increasing over time because of budget deficits, hitting 2.2% in 2048.



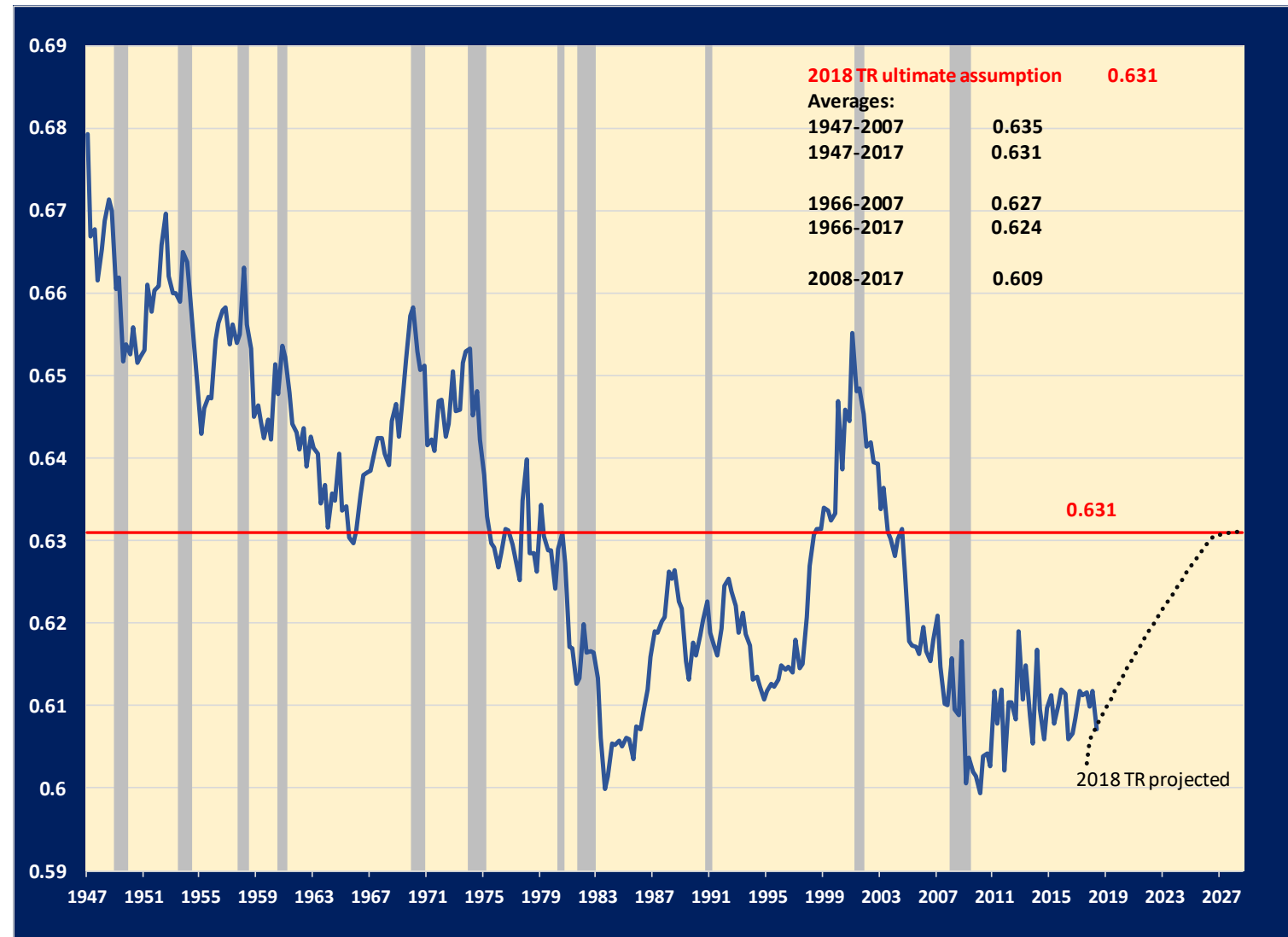
Labor Share of GDP

OACT Labor Share =
(Total Compensation + Proprietor's
Income)/GDP

Different from standard definition,
because proprietor's income taxed as
wages regardless of whether labor or
capital income

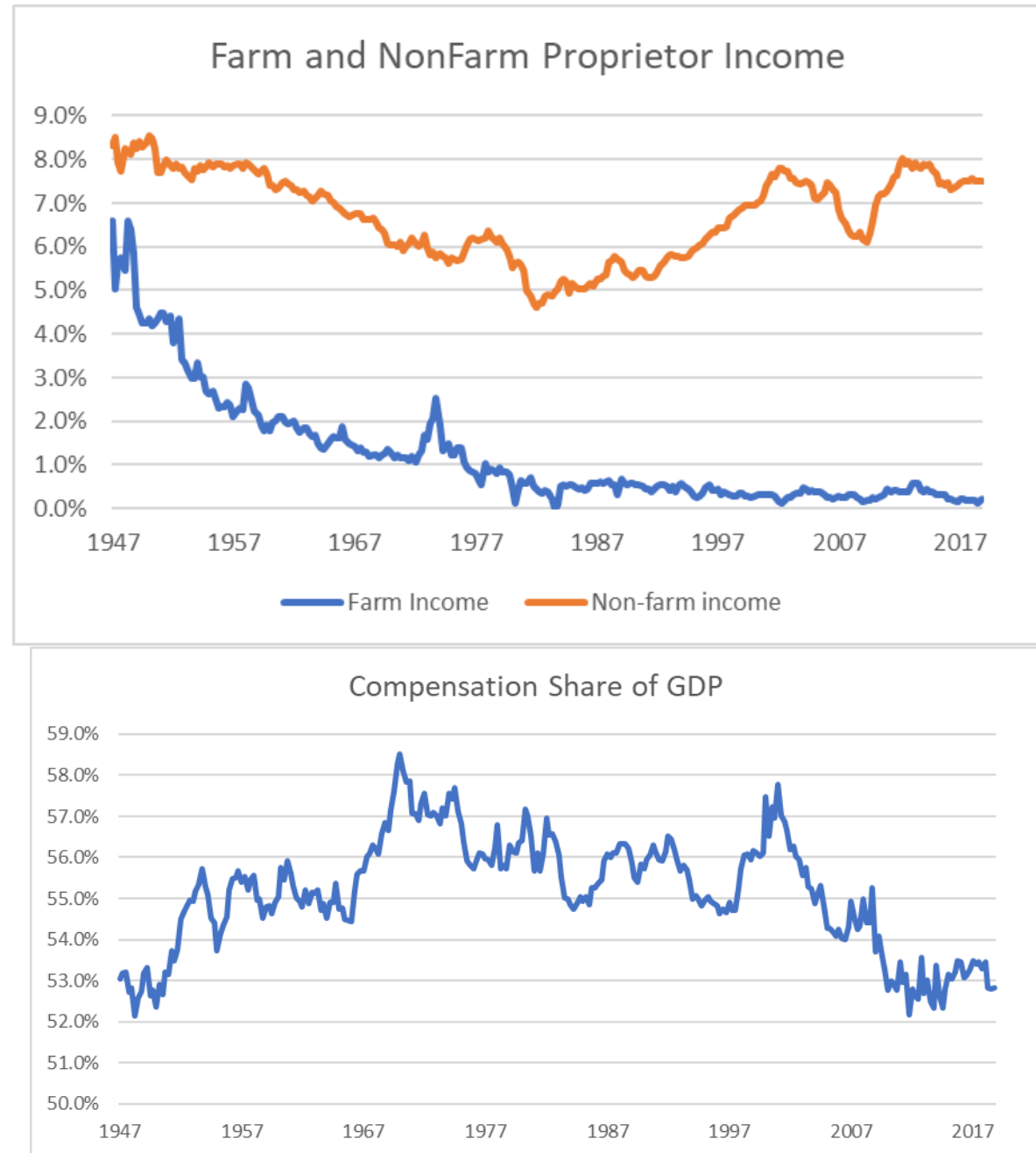
This measure has been about flat, on
average, since 1983, whereas standard
labor share has fallen.

Labor Share of GDP: History and TR 2018 projection



Labor Share of GDP

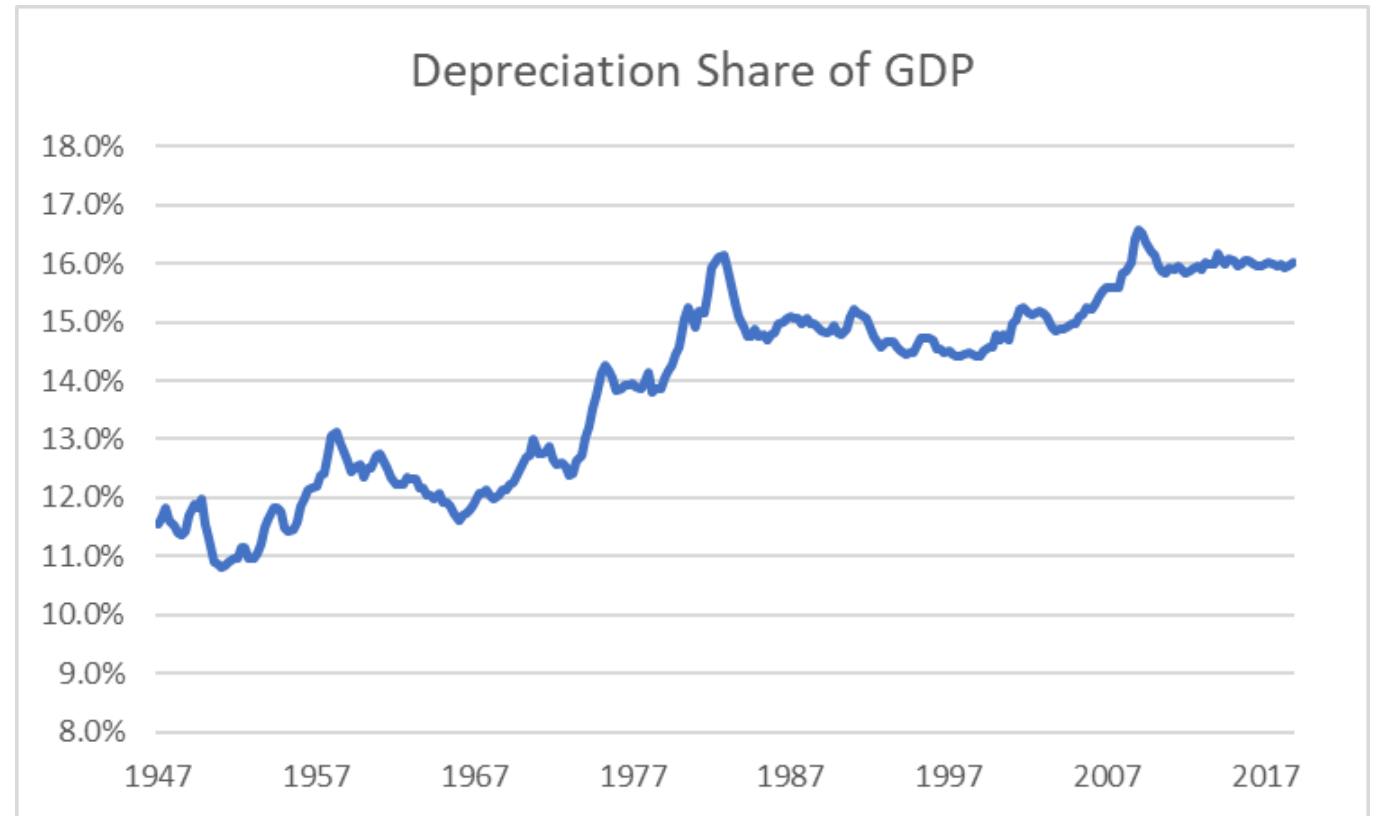
Structure of economy was so different in 1950s and 1960s, with farm proprietary income still a sizable share of GDP.



Labor Share of GDP

Structure of economy was so different in 1950s and 1960s, with farm proprietary income still a sizable share of GDP.

Also, depreciation was a far smaller share of GDP.



Labor Share of GDP

Structural changes before around 1975 or 1980 suggest shouldn't include those years in projecting forward.

Average labor share:

1975-2018: 61.9

1985-2018: 61.8

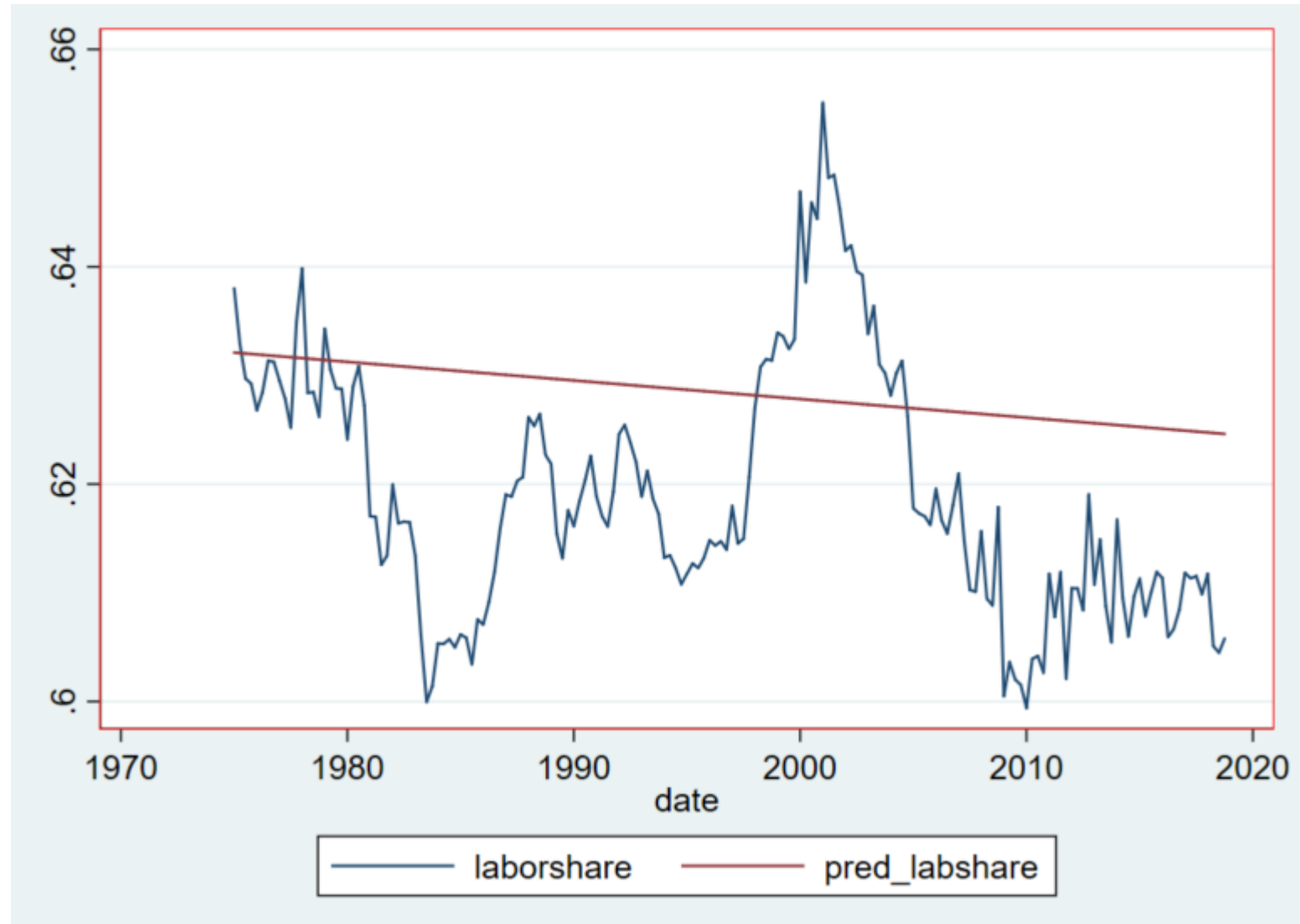
1995-2018: 61.9

But labor share also cyclical and trending down

Run regression of labor share on long lags of output gaps (labor share depressed for 6 years after an output gap) and a time trend from 1975 on.

Suggests labor share should be around 62.5 percent now and declining over time

Predicted and Actual labor shares



Labor Share of GDP

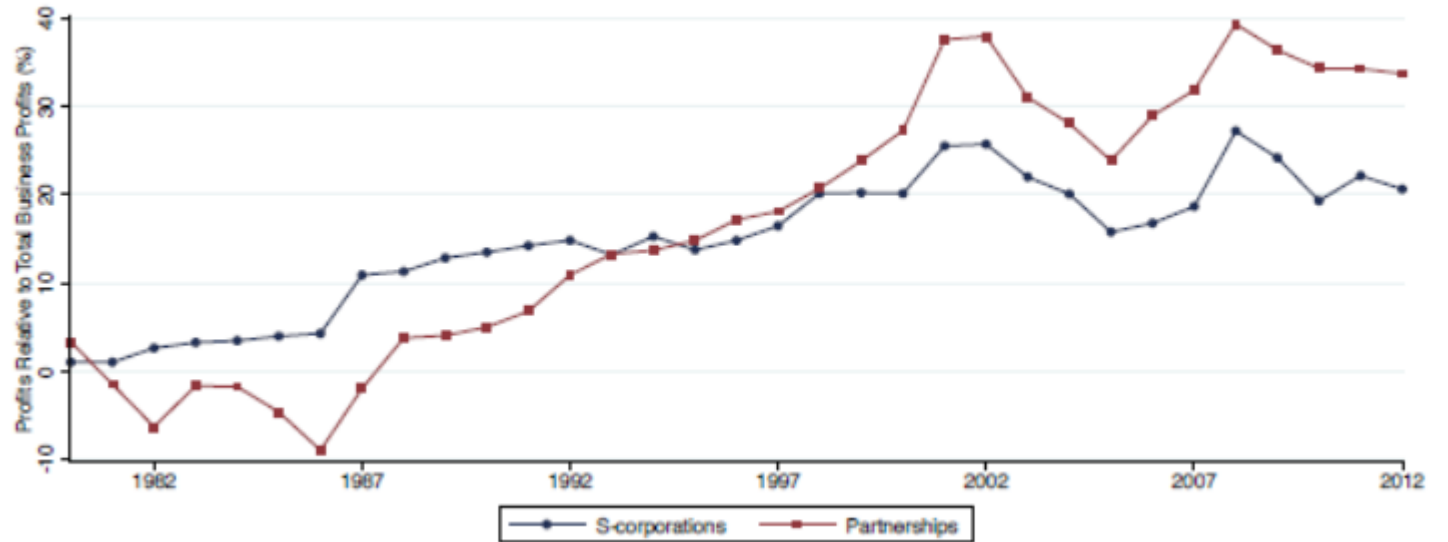
Explanations for the decline:

Smith, Yagan, Zidar, and Smith (2018 and forthcoming): A significant part of the decline in corporate labor share is from shifting forms of organization

1986 Tax Reform and subsequent tax changes altered incentives for organizational form,

away from C-Corps and Toward S-Corps and Partnerships

B. Business Activity in Pass-Through Form (1980–2012, SOI)



C-Corp to S-Corp:

When an organization switches from C-Corp to S-Corp, reported labor compensation falls and profits increase.

When C-Corp, increased compensation lowers corporate taxes, but with S-Corps, there is no corp tax so incentives switch.

Lowers the measured labor share in corporations (and taxable wages). Another reason labor share should stay low.

This research also relevant to views on inequality—top 1% increasingly taking income as business income—flattening of share of compensation earned by top 1% might be an artifact.

Labor Share of GDP

Change explains some of decline in corporate labor share

Other proposed explanations for the decline:

Offshoring/Globalization

Automation has increasingly replaced labor on net (Acemoglu, Autor and Solomons)

My view:

Let labor share rise to 62 instead of 63, and stay there.

One possibly big issue is effects of 2017 tax legislation on choice of corporate form:

Provides 20% deduction for some non-corporate income (S corps, Partnerships)

Might see large shifts from employment to self-employment

Once self-employed, many expenses become deductible (mileage, cell phone, etc.)

Law expires in 2026 (in theory)

Earnings Share of Compensation

Earnings = Compensation –
employee benefits –
employer share of taxes

Employee benefits =
pensions + health benefits

Changes over time driven by
health benefits.

Basic questions about health spending growth:

For a very long time, health spending has increased faster than GDP: difference is called “excess cost growth”

Excess cost growth can’t continue forever – else health care would be 100% of GDP. Long-term projections must assume a slowdown.

Health cost growth slowed sharply around the recession and has yet to recover: new normal? Temporary lull? ACA?

Cadillac tax: 40% excise tax on “high cost” tax plans expected to encourage employers to curtail health insurance benefits

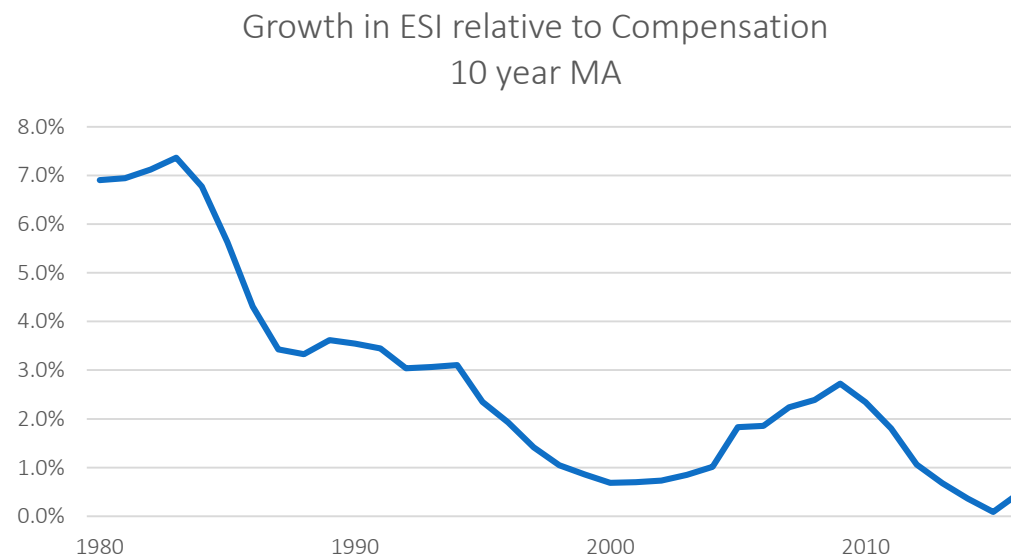
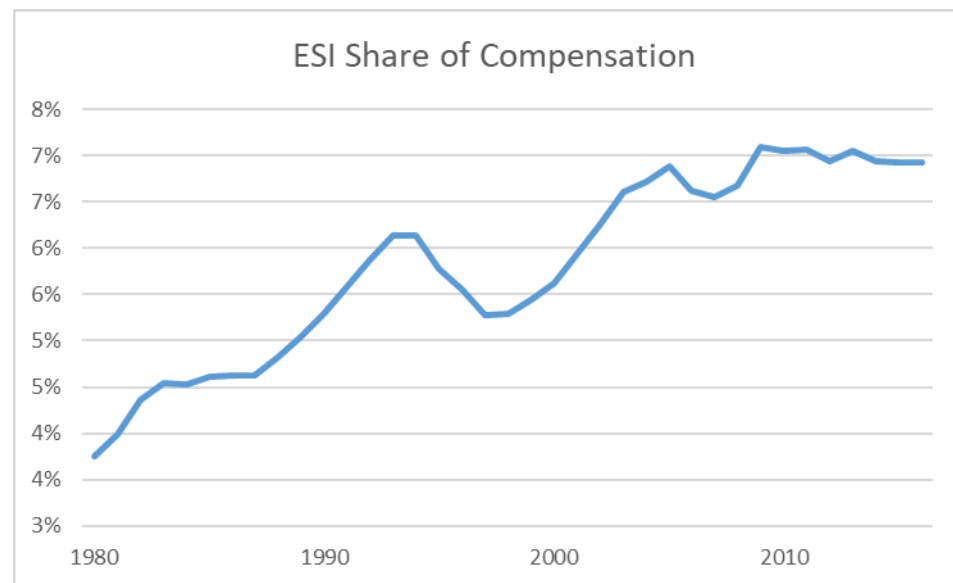
Keeps on being delayed—now scheduled to be implemented in 2022.

Earnings Share of Compensation

Health insurance premium cost growth was low relative to compensation in the mid-1990s, high in the early 2000s, and mostly low since then.

10-year moving average of around 1% seems reasonable to start, not accounting for Cadillac tax

Might expect this to drift down over time, as marginal value of increased health falls relative to other consumption

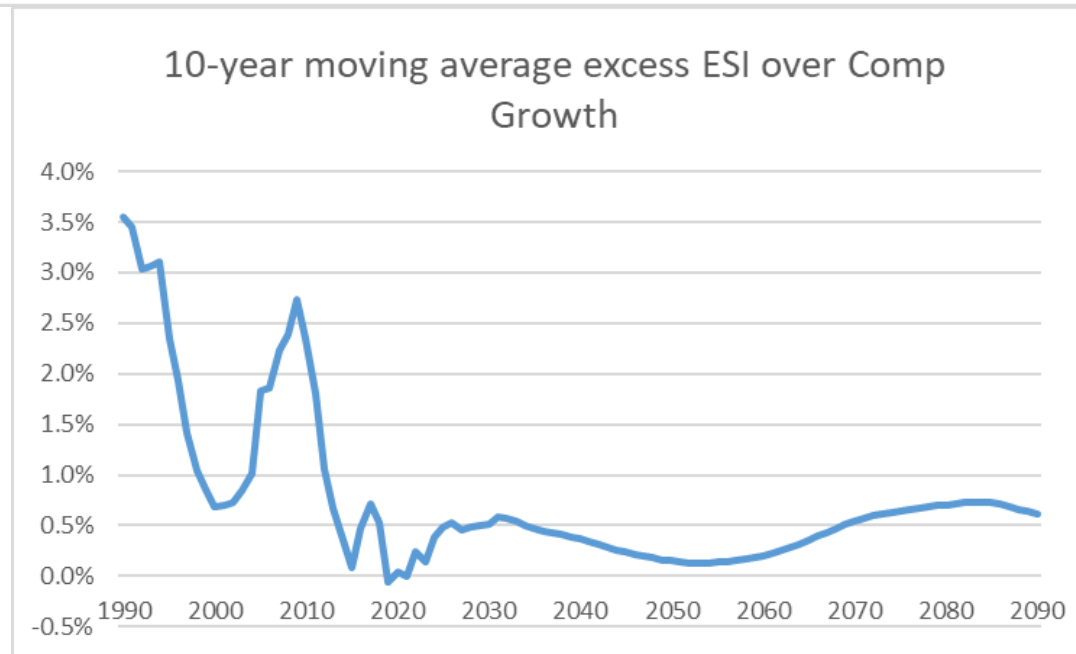
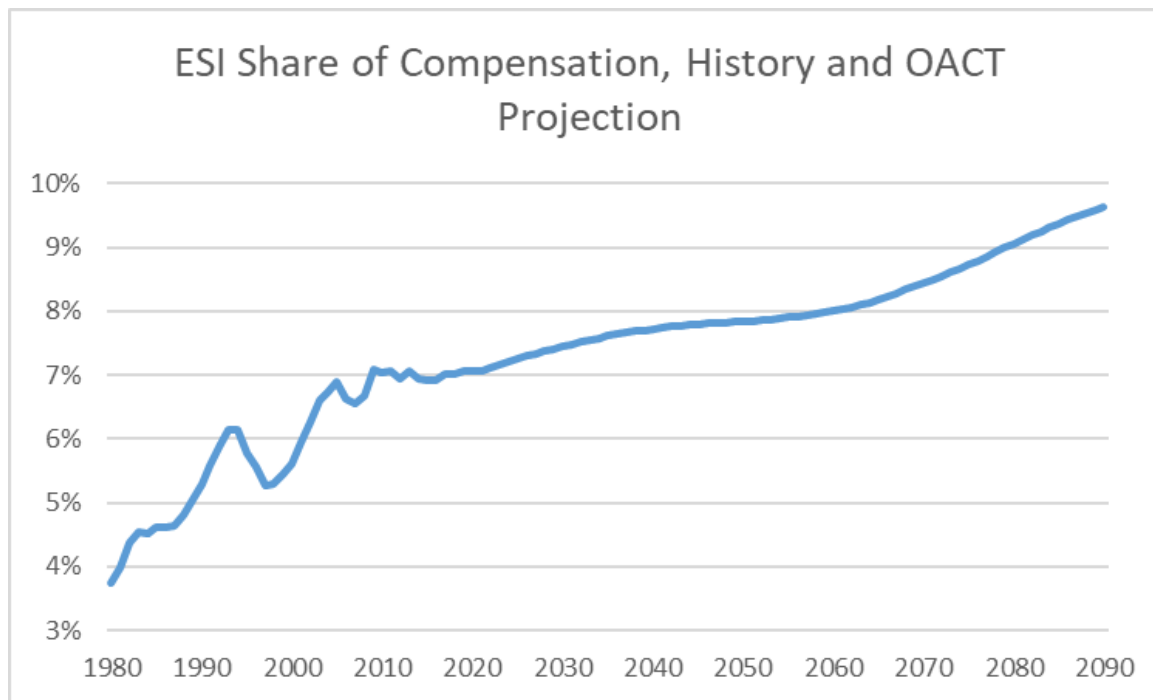


Earnings Share of Compensation

Sharp slowdown in growth rate of ESI as Cadillac tax increasingly bites

Question about current law vs current policy

(No real bracket creep, but Cadillac tax continues to tax an ever increasing share of health insurance?)



Deflators

Level of inflation: doesn't matter, because almost everything indexed. (Not thresholds for benefit taxation)

Wedge between GDP and CPI-W matters, once you've chosen productivity growth, because productivity growth deflated with GDP deflator, but benefits growth with CPI-W.

CPI and GDP deflator differ both because of the types of goods included and because of different techniques used to calculate them. (Chaining).

Estimates are that chaining would subtract about 0.3 pp from CPI.

Difference in coverage between GDP deflator and CPI (for example, smaller share of health spending in CPI) raises CPI another 0.1.

Might be worth thinking about health spending and wedge over time.

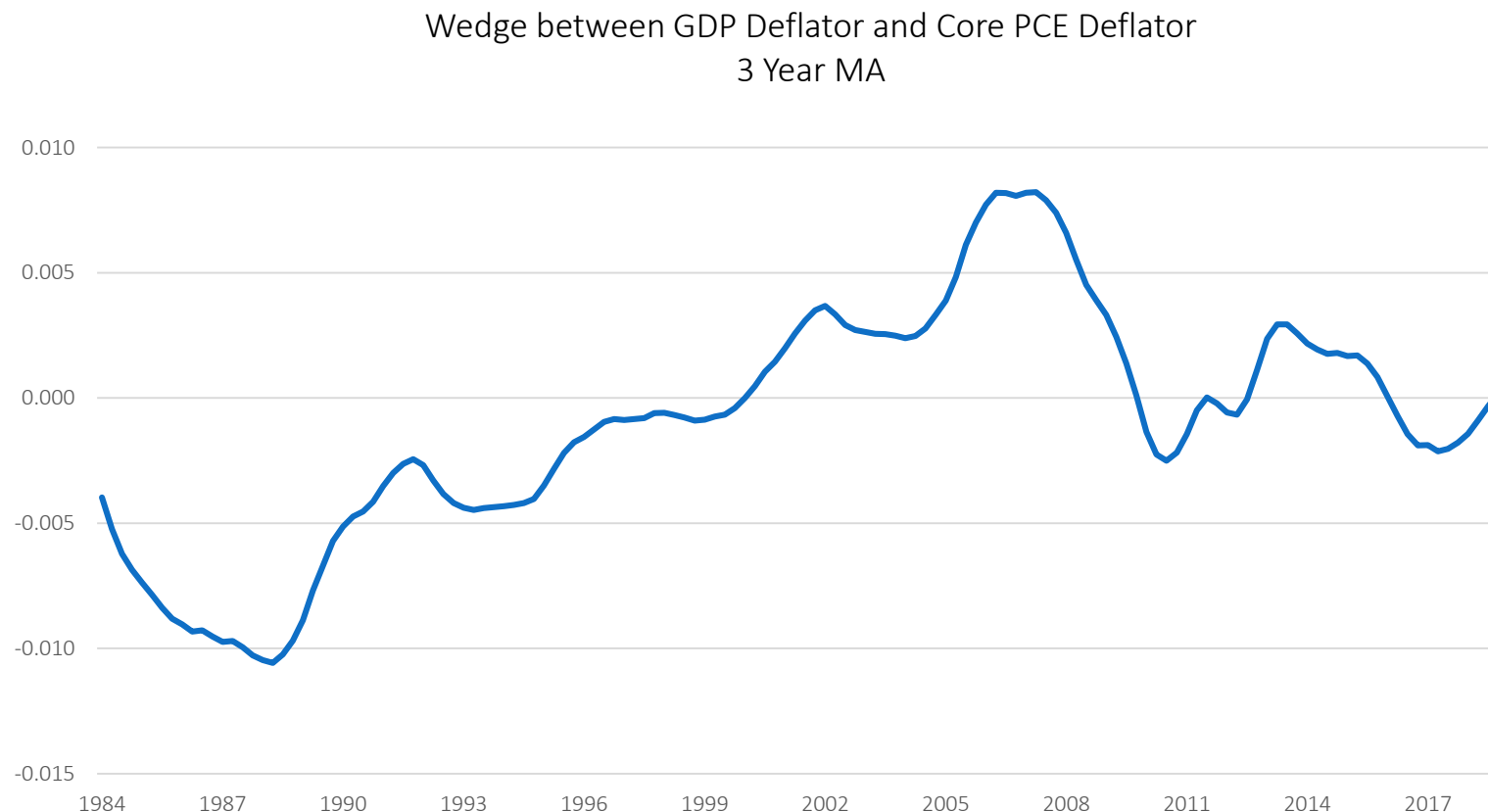
Deflators

GDP Deflator

Fed has set a symmetric inflation of 2%, using core PCE deflator as target.

This is a regime shift (reflecting a shift in economic thinking), and is credible for long-run forecasts.

Wedge between Core PCE and GDP deflator close to 0 on average.



Why not just assume GDP deflator rises at 2%

CBO, other forecasters do.